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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/448,927	11/24/1999	STEPHEN T. WELLINGHOFF	BTEC-9643	5618

321 7590 03/02/2004

SENNIGER POWERS LEAVITT AND ROEDEL
ONE METROPOLITAN SQUARE
16TH FLOOR
ST LOUIS, MO 63102

EXAMINER	
ANTHONY, JOSEPH DAVID	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/448,927	WELLINGHOFF ET AL.
	Examiner	Art Unit
	Joseph D. Anthony	1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-78* is/are pending in the application.

4a) Of the above claim(s) *11-37 and 50-78* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 38-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FINAL REJECTION

Claim Rejections - 35 USC § 102 & 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10 and 38-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Hancock U.S. Patent Number 5,772,897 or Yoshida et al. U.S. Patent Number 6,306,352.

Hancock teaches using a porous support impregnated with metal oxides, such as copper and zinc oxides. The impregnated support is placed in an aqueous medium containing a pollutant such as benzoic acid, with sodium hypochlorite to oxidize the benzoic acid to carbon dioxide. Other pollutants can be oxidized to oxygen gas, see abstract. Applicant's claims are deemed to be

anticipated over Example 4. Although the patent does not directly disclose the use of electromagnetic energy, such as light, to activate the metal oxide(s), such is deemed to be moot since applicant's invention is drawn to a composition not to a method of activating the composition.

Yoshida et al teaches oxygen-generating materials containing carbon dioxide absorbers. Applicant's claims are deemed to be anticipated over Example 24 wherein a composition is taught that comprises in part: sodium carbonate hydrogen peroxide adduct, manganese dioxide and activated alumina. Although the patent does not directly disclose the use of electromagnetic energy, such as light, to activate the metal oxide(s), such is deemed to be moot since applicant's invention is drawn to a composition not to a method of activating the composition. Furthermore, it is held by the examiner that the patent's oxygen generating compositions produced small quantities of carbon dioxide due to the use of sodium carbonate hydrogen peroxide adduct.

4. Claims 1-5, 7-10, 38-42 and 44-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang et al. U.S. Patent Number 5,783,105 or Yoshida U.S. Patent Number 5,898,126.

Zhang et al. teaches oxygen generating compositions that comprise in part: a transition metal oxide catalyst, a metal fuel, an oxygen source material etc., see abstract, column 4, line 29 to column 5, line 23. Applicant's claims are deemed to be anticipated over the examples, such as example 3. Although the

patent does not directly disclose the use of electromagnetic energy, such as light, to activate the metal oxide(s), such is deemed to be moot since applicant's invention is drawn to a composition not to a method of activating the composition. Furthermore, it is held by the examiner that the patent's oxygen generating compositions produced small quantities of carbon dioxide due to the use of sodium carbonate hydrogen peroxide adduct.

Yoshida teaches air bag generating compositions that comprise a nitrogen containing organic compound, an oxygen generating compound, and a catalyst, such as copper oxide, see the abstract, and Tables 1-2. Applicant's claims are deemed to be anticipated over the compositions listed in the Tables. Although the patent does not directly disclose the use of electromagnetic energy, such as light, to activate the metal oxide(s), such is deemed to be moot since applicant's invention is drawn to a composition not to a method of activating the composition.

5. Claims 1-5, 7-10, 38-42 and 44-49 rejected under 35 U.S.C. 102(b) as being anticipated by Cawlfield et al. U.S. Patent Number 5,411,643.

Cawlfield et al teaches integrated process of using chloric acid to separate zinc oxide and manganese oxide. Applicant's claims are deemed to be anticipated over the chlorine generating aqueous compositions comprising chloric acid, zinc oxide and manganese oxide, see abstract, and column 4, lines 10-65.

6. Claims 6 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida U.S. Patent Number 5,898,126.

Yoshida has been described above and differs from applicant's claimed invention in that there is no direct teaching (i.e. by way of an example) to where a composition is taught that actually contain one of applicant's claimed anion species.

It would have been obvious to one having ordinary skill in the art to use the broad disclosure of the reference as motivation to actually use one of applicant's claimed anions, such as chlorite or hypochlorite, since such anions directly fall with the broad category of oxo halogen acid salts as disclosed by the reference, see column 3, line 64 to column 4, line 51.

Response to Arguments

7. Applicant's Amendment and arguments filed 12/12/2003 have been fully considered but are not persuasive for the reasons set forth above. Additional examiner comments are found below. Not withstanding applicant's traversal, the examiner maintains that applicant's representative, Kathleen M. Petrillo, orally elected on 6/6/03 "hypochlorite salts" as the solid containing anions, and elected "chlorine" as the gas generated. As such, claims 11 and 50 remain withdrawn from examination since they are drawn to embodiments that do not read on the elected species.

The examiner is maintaining his position, as clearly stated above, that although most of the applied patents do not directly disclose the use of electromagnetic energy, such as light, to activate the metal oxide(s), such is

deemed to be moot since applicant's invention is drawn to a composition not to a method of activating the composition.

Applicant argues throughout the response that: "it is improper to chacterize the "capable of" statement in the claims as moot, since those functional limitations define the scope of the invention. "A functional limitation must be evaluated and considered, just like any other limitation of the claims, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used". MPEP 2173.05(g)."", see page 11, lines 21-25 of the amendment filed 12/12/03. The examiner assets that he has done just that, and has thus fulfilled the requirement of MPEP 2173.05(g). The examiner believes that the problem here is that applicant has misconstrued the scope of their claimed invention which is drawn to a composition of matter. This is clearly seen in applicant's assertion, as set forth in the last 2 lines on page 9 of the amendment, wherein applicant states: "All claims involve activation of some form of electromagnetic energy catalyst (e.g. photocatalyst) to oxidize or react an anion to generate and release a gas.". The examiner totally rejects such an interpretation of the pending claims. On the contrary, applicant's invention is drawn to a composition of mater that comprises: 1) a catalyst that is capable of being activated by electromagnetic energy, and 2) a solid or solid-containing suspension containing anions capable of being oxidized or reacted to generate at least one gas. As such, NO claims have any requirement that electromagnetic energy is actually being applied to the claimed composition. Applicant is

reminded that the elected claims are all compositions claims and not method of use claims. The fact that the applied Hancock, Yoshida et al., and Cawlfield et al. patents do not disclose the use of electromagnetic energy to activate their taught compositions is deemed to be moot precisely because applicant's claims also do NOT require any actual electromagnetic energy. All that applicant's claims require is that the composition is capable of generating at least one gas when the catalyst is activated by electromagnetic energy. The examiner asserts that all the applied prior-art references clearly meet such a "limitation". In fact, applicant's representative has clearly asserted on the record that the composition of one of the applied prior-art references would indeed generate at least one gas when the composition is exposed to electromagnetic energy. Applicant's said admission is set forth on page 13, lines 17-19 of the amendment, wherein applicant states: "If the decomposition described by Yoshida were energy activated, as in applicant's composition, **then Yoshida's composition would produce ozone, not oxygen**." [Emphasis added]. This is exactly the examiner's position, because both Yoshida's composition and applicant's claimed composition are the same. The "fact" that applicant may have discovered a "new property" (i.e. that by exposing Yoshida's composition to electromagnetic energy that ozone would be produced) is noted, but such as "discovery" does not render an otherwise old composition patentable.

Finally, applicant's assertion on page 11, lines 11-20, that: "Hancock does not described a composition including both the catalyst and the

anions" is clearly false. The fact that Hancock's metal oxides are impregnated onto a porous support is noted, but such is totally irrelevant since Hancock's metal oxide impregnated porous support is in direct contact with the sodium hypochlorite containing aqueous medium. Applicant is reminded that the pending composition claims use the open claim language of "comprising" which opens up the claims to all additional components, such as a porous support for metal oxide catalyst. Furthermore, applicant's claims have no limitation of any kind that the claimed composition is homogenous in nature that would preclude Hancock's metal oxide impregnated porous support.

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Examiner Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. This examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 6:30 p.m. in the eastern time zone. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (703) 872-9306. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.

Joseph D. Anthony

Joseph D. Anthony
Primary Patent Examiner
Art Unit 1714

2/21/04